



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,845	03/04/2002	Julio A. Abusleme	108910-00057	4315
7590	02/16/2006		EXAMINER	
AREN'T FOX KINTNER PLOTKIN & KAHN, PLLC Suite 600 1050 Connecticut avenue, N.W. Washington, DC 20036-5339			ZACHARIA, RAMSEY E	
			ART UNIT	PAPER NUMBER
			1773	
DATE MAILED: 02/16/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/086,845	ABUSLEME ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Ramsey Zacharia	1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 05 January 2006.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-16 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-16 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_ .

5)  Notice of Informal Patent Application (PTO-152)

6)  Other: \_\_\_\_ .

**DETAILED ACTION**

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05 January 2006 has been entered.

***Claim Rejections - 35 USC § 103***

3. Claims 1-3, 6-9, and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abusleme et al. (EP 1,038,914 A1) in view of Stoeppelmann (U.S. Patent 5,869,157).

Abusleme et al. teach a multilayer article that may be used as a fuel hose comprising a layer of a fluorinated polymer composition and a layer of hydrogenated polymer (paragraph 0022). Suitable hydrogenated polymers include thermoplastic polymers, such as polyamides (paragraph 0023). The fluorinated polymer composition comprises a copolymer of ethylene with tetrafluoroethylene and/or chlorotrifluoroethylene modified with an acrylic monomer, such as n-butylacrylate, that reads on the monomer of formula (a) in instant claim 1 (paragraphs 0009 and

0011). The copolymer comprises 10-70 mole% ethylene, 30-90 mole% tetrafluoroethylene and/or chlorotrifluoroethylene, and 0.1-30 mole% of acrylic monomer (paragraph 0010).

Regarding claim 9, the tube of Abusleme et al. is taken to be in the form of sheath-core fibers since it has inner (i.e. core) and outer (i.e. sheath) layers.

Abusleme et al. do not teach the presence of a layer comprising diamines and a polyamide having an amount of -NH<sub>2</sub> end groups in the range of 40-300  $\mu\text{eq/g}$ . However, Abusleme et al. do teach a tube comprising a layer of a fluoropolymer and a layer of polyamide.

Stoeppelmann is directed to an adhesion promoter that bonds fluoropolymers to polyamides for use in multilayer tubes (column 2, lines 33-41). In one embodiment the adhesion promoter comprises a polyamide having an -NH<sub>2</sub> end group concentration of 50  $\mu\text{eq/g}$  and a diamine, such as decyldiamine or dodecyldiamine (column 4, lines 1-14). In an alternative embodiment, the adhesion promoter comprises the diamine and a polyamide having an equal amount of -NH<sub>2</sub> and -COOH end groups (column 4, lines 20-26). The amount of -NH<sub>2</sub> groups in this alternative embodiment should be about 35  $\mu\text{eq/g}$  (total number of end groups = -NH<sub>2</sub> end groups + -COOH end groups = 20  $\mu\text{eq/g}$  + 50  $\mu\text{eq/g}$  = 70  $\mu\text{eq/g}$ ; if the polymer has an equal amount of -NH<sub>2</sub> and -COOH end groups it should have 35  $\mu\text{eq/g}$  of each). The diamine is present in an amount of 0.25-2 wt% (column 4, lines 12-14).

One of ordinary skill in the art would be motivated to use the adhesion promoter of Stoeppelmann in the article of Abusleme et al. to tightly adhere the fluoropolymer and polyamide layers together.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Abusleme et al. (EP 1,038,914 A1) in view of Stoepelmann (U.S. Patent 5,869,157) as applied to claim 1 above, and further in view of Krause et al. (U.S. Patent 5,958,532).

Abusleme et al. taken in view of Stoepelmann teach all the limitations of claim 10, as outlined above, except for the present of an inner layer that is made conductive by the incorporation of graphite and/or carbon black.

Krause et al. is directed to a fluoropolymer hose that may be used in a fuel line (column 1, lines 15-17). The hose comprises two fluoropolymers layers (column 2, lines 23-29). The inner fluoropolymer layer has electrostatic discharge resistance, allowing electrostatic charge generated during the flowing of fuel to be carried to the ground (column 3, lines 52-63). The most preferred fluoropolymer for the inner fluoropolymer layer is ETFE sold under the Tefzel® trademark (column 3, line 64-column 4, line 20). Tefzel® ETFE fluoropolymers are composed of about 40-70 % ethylene and 30-60% tetrafluoroethylene.

One of ordinary skill in the art would be motivated to add an inner fluoropolymer layer of ETFE having electrostatic discharge resistance to the fuel hose of Abusleme et al. to yield a safer product by allowing electrostatic charge generated during use to be carried to the ground.

#### *Allowable Subject Matter*

5. Claims 4 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The reasons for indicating allowable subject matter was put forth in the Office action mailed 14 August 2003.

***Response to Arguments***

6. Applicant's arguments filed 05 January 2006 have been fully considered but they are not persuasive.

The applicants argue that the rejections of record rely on improper hindsight because Stoepelmann does not provide any motivation for selecting the specific fluoropolymer of Abusleme et al. instead of one of the numerous fluoropolymers of Stoepelmann.

This is not persuasive because the adhesion promoter taught by Stoepelmann is disclosed as suitable for tightly joining thermoplastically workable fluoropolymers with polyamides (column 2, lines 61-65). That is, Stoepelmann teaches that the adhesion promoter will work with any fluoropolymer that is thermoplastically workable and the fluoropolymers of Abusleme are thermoplastically workable since they are described as melt-processible.

The applicants also argue that the results of the present invention are unexpected because Stoepelmann teaches that a polyamide having excess -NH<sub>2</sub> end groups and not admixed with a diamine (as in present claim 1) does not adhere to fluoropolymers without any additional ingredients or post treatments.

This is not persuasive for at least the reason that claims as written are not commensurate in scope with the alleged unexpected results. Present claim 1 is not directed to a fluoropolymer adhered to a polyamide having excess -NH<sub>2</sub> end groups not admixed with a diamine. Rather, claim 1 is directed to a multilayer article that comprises a polyamide, which may be admixed with a diamine, bonded to a fluoropolymer. This embodiment is explicitly recited in present claim 2. Moreover, the results of Comparative Example 5 in the present specification does not

appear to be unexpected because Abusleme et al. recognized and demonstrated that a fluoropolymer copolymerized with the acrylic monomer of present claim 1 exhibits improved adhesion compared to the same fluoropolymer without the acrylic monomer. Therefore, the showing of Comparative Example 5 of the present invention does not represent an unexpected result because one skilled in the art would expect a fluoropolymer copolymerized with the claimed acrylic monomer to exhibit improved adhesion compared to the same fluoropolymer without the acrylic monomer.

The applicants note that Abusleme et al. use the ECTFE not containing acrylic monomer (a) in conjunction with epichlorohydrin containing a crosslinking agent, which is distinguishable from the polyamides presently claimed.

This is not persuasive because the teaching of one embodiment does not constitute a teaching away from other disclosed embodiments. That Abusleme et al. teach the use of epichlorohydrin rubber as a hydrogenated polymer does not detract from the explicit teaching of a polyamide as the hydrogenated polymer.

The applicants further argue that increasing the adhesion of multilayers of Abusleme et al. is not the present technical problem as asserted by the examiner.

This is not persuasive because there is no requirement that the motivation for combining two prior art references be directed addressing the same problem as the applicants' invention since it is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by the applicants. See MPEP 2144.

***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Zacharia whose telephone number is (571) 272-1518. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney, can be reached at (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ramsey Zacharia  
Primary Examiner  
Tech Center 1700